ENVIRONMENTAL ASSESSMENT OF REPLACING BUILDING 5015 AT ANDREWS AIR FORCE BASE, MARYLAND

SEPTEMBER 2003

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ABBREVIATIONS AND ACRONYMS

°F	Degrees Fahrenheit
89 AW	89th Airlift Wing
89 CES/CEV	89th Environmental Flight
ACM	asbestos containing material
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
AMC	Air Mobility Command
AOC	area of concern
AQCR	Air Quality Control Region
AT/FP	Anti-Terrorism/Force Protection
C&D	construction and demolition
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
DOD	U.S. Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FIP	Federal Implementation Plan
FONSI	Finding of No Significant Impact
FY	fiscal year
HAP	hazardous air pollutant
HSWA	Hazardous and Solid Waste Amendments
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
kV	kilovolt
LBP	lead-based paint
MDE	Maryland Department of Environment
mg/m^3	milligrams per cubic meter
mogas	motor gas
MSL	mean sea level
MSW	municipal solid waste
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxide(s)
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NSR	New Source Review
O_3	ozone
Pb	lead
PEPCO	Potomac Electric Power Company
PM_{10}	particulate matter ≤ 10 microns in diameter
$PM_{2.5}$	particulate matter ≤ 2.5 microns in diameter
POLs	petroleum, oil, and lubricants
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendment and Reauthorization Act
SIP	State Implementation Plans
SO_2	sulfur dioxide
SO_x	sulfur oxide(s)
SR	State Route
tpy	tons per year
TSCA	Toxic Substances Control Act
TSP	Total Suspended Particulate
U.S.	United States
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
VOC	volatile organic compound
WWSC	Washington Suburban Sanitary Commission
WWTP	wastewater treatment plant
$\mu g/m^3$	micrograms per cubic meter

FINDING OF NO SIGNIFICANT IMPACT

REPLACING BUILDING 5015 AT ANDREWS AIR FORCE BASE, MARYLAND

INTRODUCTION

The 89th Airlift Wing (89 AW) of the United States Air Force (USAF) has proposed to replace Building 5015 at Andrews Air Force Base (AFB), Maryland to further its anti-terrorism/force protection (AT/FP) objectives. The Proposed Action and the No Action Alternative were assessed in the attached Environmental Assessment (EA), which is hereby incorporated by reference. Andrews AFB is a USAF base under the Air Mobility Command and is the headquarters base to the 89 AW. The 89 AW provides logistical support for the President, Vice President, cabinet members, and high-ranking U.S. and foreign government officials.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to replace an inadequate existing facility to meet force protection and quality of life (QOL) standards. The current Building 5015 is an 8 foot by 8 foot modest facility that does not meet the force protection requirements, nor does it meet QOL standards for sustained operations. Replacing Building 5015 would provide Andrews AFB with the increased capability for current operations and sustain any future operations. The need for the proposed replacement of Building 5015 is to provide personnel with a more protected area from the environment and meet Air Force Instruction (AFI) 31-101, Air Force Physical Security Program.

DESCRIPTION OF THE PROPOSED ACTION

Andrews AFB proposes to replace Building 5015 with a more functional building. Building 5015 is currently an 8 foot by 8 foot (64 square feet) rudimentary structure. Under the Proposed Action, the building would be torn down and replaced with a larger, more functional 1,600 square foot structure. While the current building has minimal accessories, the new facility would have more modern and comfortable accommodations, including a “Presidential” appearance, a waiting area for guests, a restroom for guests, a secure guarded restroom, and a package X-ray. By improving the appearance and amenities of Building 5015, the 89 AW hopes to provide Andrews AFB with the increased capability for current operations and sustain any future operations.

NO ACTION ALTERNATIVE

Under the No Action Alternative, Andrews AFB would continue to use Building 5015 in its current condition and configuration. There would be no change from the existing conditions at the installation. The current

work environment of Building 5015 would continue to be suboptimal, force protection may be compromised and future operations would suffer. Additionally, the image of 89 AW would suffer as a result of neglecting their most important mission.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

Analysis performed in the EA addressed potential effects on air quality, geological resources, hazardous materials and wastes, infrastructure and utilities and safety. The analysis indicates that implementing the Proposed Action would have no significant direct, indirect or cumulative effects on the quality of the natural or human environment.

PUBLIC REVIEW AND INTERAGENCY COORDINATION

Federal, state and local agencies listed in Appendix A of the EA were contacted for comment on the Proposed Action. Agency comments were included in the analysis.

Based on the provisions set forth in the Proposed Action, all activities were found to comply with the criteria or standards of environmental quality of appropriate Federal, state and local agencies. A draft of this FONSI was made available to the public. Public comments will be addressed at the end of the review period prior to implementing the Proposed Action.

FINDING OF NO SIGNIFICANT IMPACT

After review of the EA prepared in accordance with the requirements of the National Environmental Policy Act, the Council on Environmental Quality (CEQ) regulations, and Environmental Impact Analysis Process, 32 Code of Federal Regulations 989, as amended, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment and, therefore, an Environmental Impact Statement does not need to be prepared. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.

RUSSELL J. FRASZ, Colonel, USAF
Vice Commander, 89th Airlift Wing

30 Sep 03
Date

COVER SHEET

ENVIRONMENTAL ASSESSMENT OF REPLACING BUILDING 5015 AT ANDREWS AIR FORCE BASE, MARYLAND

Responsible Agencies: U.S. Air Force (USAF), Air Mobility Command (AMC), and 89th Airlift Wing (89 AW), Andrews (AFB), Maryland.

Affected Location: Andrews AFB, Maryland

Report Designation: Environmental Assessment (EA)

Proposed Action: Building 5015 is currently an 8 foot by 8 foot modest facility that does not meet the force protection requirements, nor does it meet quality of life standards for sustained operations. Andrews AFB proposes to replace Building 5015 with a larger, more functional building. The new facility would have more modern and comfortable accommodations, including a "Presidential" appearance, a waiting area for guests, a restroom for guests, a secure guarded restroom, and a package X-ray. By improving the appearance and amenities of Building 5015, the 89 AW hopes to provide Andrews AFB with the increased capability for current operations and sustain any future operations.

This EA has been prepared to evaluate the Proposed Action and the No Action Alternative. Resources that are considered in the impact analysis are air quality, geological resources, hazardous materials and waste management, infrastructure and utilities, and safety. The EA will be made available to the public upon completion.

Written comments and inquiries regarding this document should be directed to: Mr. John Franz, 89 CES/CEV, 3479 Fetchet Avenue, Andrews AFB, MD 20762.

Privacy Advisory

Your comments on this EA are requested. Letters or other written comments provided may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.

ENVIRONMENTAL ASSESSMENT OF REPLACING BUILDING 5015 AT ANDREWS AIR FORCE BASE, MARYLAND

AIR MOBILITY COMMAND
Environmental Planning Branch
507 Symington Drive
Scott Air Force Base, IL 62225-5022

SEPTEMBER 2003

ENVIRONMENTAL ASSESSMENT OF REPLACING BUILDING 5015 AT ANDREWS AFB, MARYLAND

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1. Purpose of and Need for the Proposed Action

1.1 Background

Andrews Air Force Base (AFB) is a United States Air Force (USAF) base under the Air Mobility Command (AMC). The 89th Airlift Wing (89 AW) is the host unit at Andrews AFB and reports to AMC headquartered at Scott AFB, Illinois. The mission of the 89 AW is to provide logistical support for the President, Vice President, cabinet members, and high-ranking U.S. and foreign government officials. The 89 AW also provides airlift, airdrop, and air refueling support, including the movement of troops, passengers, military equipment, cargo, and mail. Other responsibilities include operation, administration, and maintenance of Andrews AFB facilities.

The events of September 11, 2001 significantly changed the nation's homeland security posture. Terrorism is a clear and present danger to the U.S. The USAF's heightened security posture is expected to remain in place indefinitely. As a result and in furtherance of anti-terrorism/force protection (AT/FP) objectives, the 89 AW has proposed replacing Building 5015 in order to provide a more secure facility that promotes quality of life for sustained operations. Building 5015 is adjacent to Hangar 5016.

The Environmental Assessment (EA) analyzes the 89 AW's Proposed Action and includes the No Action Alternative. Other alternatives were considered but eliminated from further consideration (see Section 2.3). As such, only the Proposed Action and No Action Alternative were carried forward for further analysis. If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) is unnecessary. If significant environmental issues result that cannot be mitigated to insignificance, an EIS will be required, or the Proposed Action would be abandoned and no action would be taken.

Based on the analysis in the EA, the USAF, as the decision-maker, will decide whether there are significant adverse environmental impacts associated with the construction of a new facility at Building 5015. Based on the review of the analysis, the USAF will either prepare a FONSI or recommend the analysis proceed to an EIS.

1.2 Purpose of the Proposed Action

The purpose of the Proposed Action is to replace an inadequate, existing facility to meet force protection and quality of life standards. The current Building 5015 is an 8 foot by 8 foot modest facility that does not meet the force protection requirements, nor does it meet quality of life standards for sustained operations. Replacing Building 5015 would provide Andrews AFB with the increased capability for current operations and sustain any future operations.

1.3 Need for the Proposed Action

The need for the proposed replacement of Building 5015 is to provide personnel with a more protected area from the environment and meet Air Force Instruction (AFI) 31-101, *Air Force Physical Security Program*.

1.4 Location

Andrews AFB encompasses 6,828 acres and is located in Prince George's County, Maryland, five miles southeast of Washington, D.C. (see Figure 1-1). The communities of Camp Springs and Morningside surround the base. Interstate 495 (the Capital Beltway) is immediately northwest of the base. Flight operations at Andrews AFB use two parallel Class B runways (01L/19R, West Runway and 01R/19L, East Runway), both oriented in the north-south direction. Other tenants at Andrews AFB include Air Force Reserve Command 459th Airlift Wing, Air National Guard Readiness Center, D.C. Air National Guard 113th Wing, U.S. Priority Air Transport, Civil Air Patrol, Maryland State Police, and Naval Air Facility Washington.

1.5 Summary of Key Environmental Compliance Requirements

1.5.1 National Environmental Policy Act

The National Environmental Policy Act, commonly known as NEPA, is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. NEPA established the Council on Environmental Quality (CEQ) that is charged with the development of implementing regulations and ensuring agency compliance with NEPA. CEQ regulations mandate that all Federal agencies use a systematic

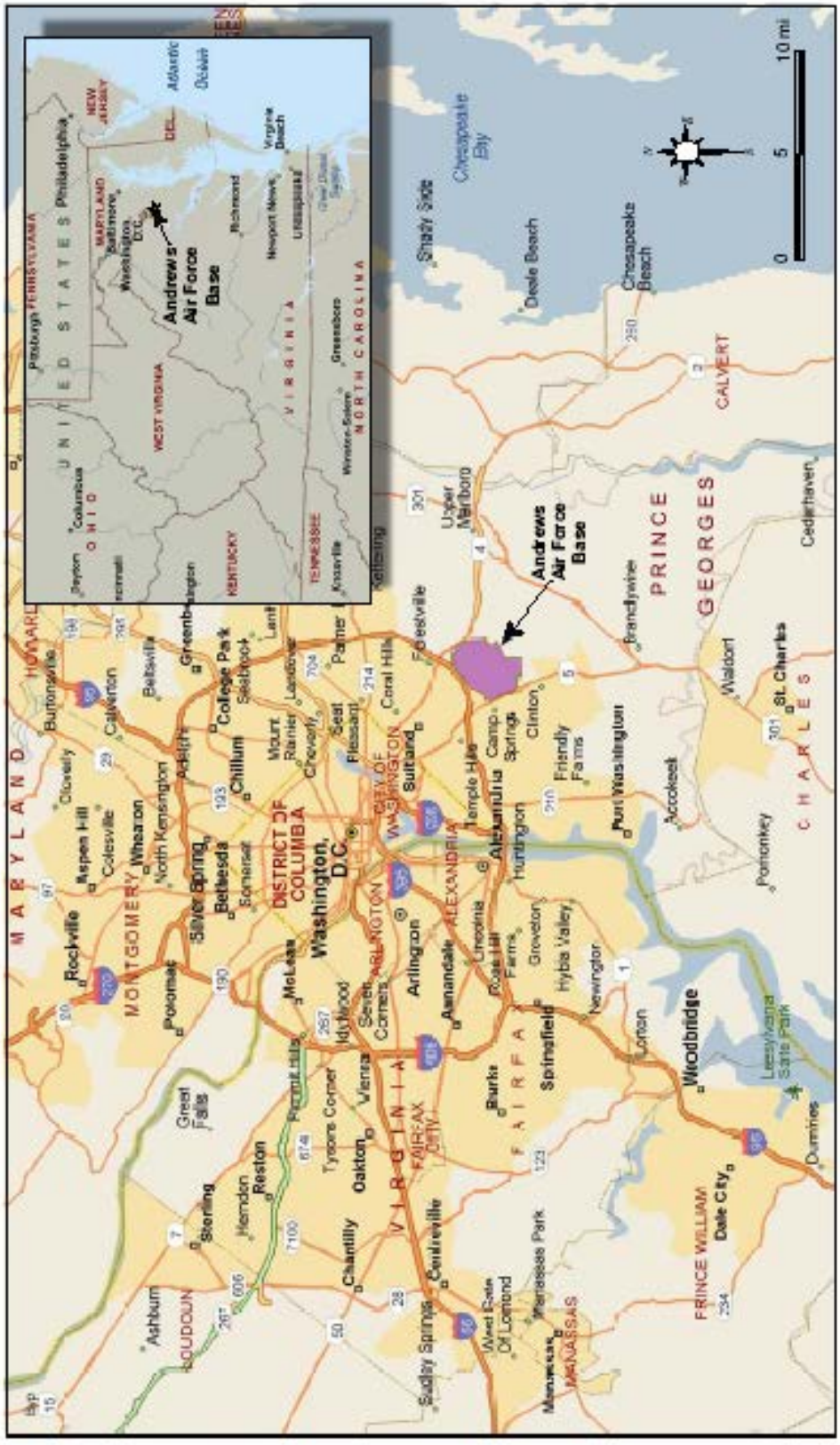

Figure 1-1. Andrews AFB and Surrounding Area

interdisciplinary approach to environmental planning and the evaluation of actions that may affect the environment. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

The process for implementing NEPA is codified in Title 40 Code of Federal Regulations (CFR) 1500-1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.* The CEQ implements and oversees Federal policy in the NEPA process. CEQ regulations specify the following must be accomplished when preparing an EA:

- Briefly provide evidence and analysis for determining whether to prepare an EIS or a FONSI
- Aid in an agency's compliance with NEPA when an EIS is unnecessary
- Facilitate preparation of an EIS when one is necessary

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *The Environmental Impact Analysis Process (EIAP)*, 32 CFR 989, as amended.

1.5.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decision-making process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decision-maker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively."

This EA will examine in detail potential effects of the Proposed Action and No Action Alternative on five resource areas including air quality, geological resources, hazardous materials and waste management, infrastructure, and safety. The following paragraphs present examples of relevant laws, regulations, and other requirements that are often considered as part of the analysis.

Safety

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements AFPD 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program (AFI 91-202), these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities, including those of the AMC.

Air Quality

The *Clean Air Act* (CAA) establishes Federal policy to protect and enhance the quality of the nation's air resources to protect human health and the environment. The CAA requires that adequate steps be implemented to control the release of air pollutants and prevent significant deterioration in air quality. The 1990 amendments to the CAA require Federal agencies to determine the conformity of proposed actions with respect to State Implementation Plans (SIPs) for attainment of air quality goals.

Noise

Federal Aviation Administration Part 150, *Airport Noise Compatibility Planning,* provides guidance to measure noise at airports and surrounding areas and determine exposure of individuals to noise that result from the operations of an airport. Federal Aviation Administration Part 150 identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. It also provides technical assistance to airport operators, in conjunction with other local, state, and Federal authorities, to prepare and execute appropriate noise compatibility planning and implementation programs (CFR Title 14, Part 150).

Infrastructure

Infrastructure consists of the systems and physical structures that enable a population in a given area to sustain it. Consideration of infrastructure is applicable to a proposed action or alternative where there may be an issue with respect to local capacities (e.g., utilities, transportation networks, energy) to provide the required support.

Water Resources

The *Clean Water Act* (CWA) (33 U.S.C. 1251 *et seq.*, as amended) establishes Federal policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters, and where attainable, to achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water.

Executive Order (EO) 11988, *Floodplain Management*, requires Federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains. Where information is unavailable, agencies are encouraged to delineate the extent of floodplains at their site.

Biological Resources

The *Endangered Species Act* (ESA) (16 U.S.C. 1531 *et seq.*) requires Federal agencies that fund, authorize, or implement actions to avoid jeopardizing the continued existence of federally listed threatened or endangered species, or destroying or adversely affecting their critical habitat. Federal agencies must evaluate the effects of their actions through a set of defined procedures, which can include preparation of a Biological Assessment and formal consultation with the U.S. Fish and Wildlife Service.

EO 11990, *Protection of Wetlands*, requires that Federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

The CWA, under Section 404, contains provisions for protection of wetlands and establishes a permitting process for activities having potential effects in wetland areas. Wetlands, riverine, and

open water systems are considered waters of the United States and, as such, fall under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE).

Cultural Resources

The *National Historic Preservation Act of 1966* (16 U.S.C. 470 *et seq.*) provides the principal authority used to protect historic properties, establishes the National Register of Historic Places, and defines, in Section 106, the requirements for Federal agencies to consider the effect of an action on properties on or eligible for the National Register of Historic Places.

Protection of Historic Properties (36 CFR 800 [1986]) provides an explicit set of procedures for Federal agencies to meet their obligations under the National Historic Preservation Act, including inventorying of resources and consultation with State Historic Preservation Officers.

The *Archeological Resources Protection Act of 1979* (16 U.S.C. 470aa *et seq.*) ensures that Federal agencies protect and preserve archeological resources on Federal or Native American lands and establishes a permitting system to allow legitimate scientific study of such resources.

EO 13007, *Indian Sacred Sites*, requires that, to the extent practicable, Federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.

EO 13084, *Consultation and Coordination with Indian Tribal Governments*, requires that each Federal agency shall have an effective process to permit elected officials and other representatives of Indian tribal governments to provide meaningful and timely input in the development of regulatory policies or matters that uniquely affecting their communities.

Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* directs Federal agencies to assess the effects of their actions on minority and low-income populations within their region of influence. Agencies are encouraged to include demographic information related to race and income in their analysis of the environmental and economic effects associated with their actions.

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2. Description of Proposed Action and Alternatives

2.1 Introduction

This section describes the Proposed Action, alternatives to the Proposed Action, and the No Action Alternative.

2.2 Proposed Action

Andrews AFB proposes to replace Building 5015 with a larger, more functional building. Building 5015, located towards the center of Andrews AFB (Figures 2-1 and 2-2), is currently an 8 foot by 8 foot (64 square feet) rudimentary structure. Siting of the proposed replacement for Building 5015 included consideration of several criteria (USACE 2003). Building 5015 must:

- provide enough space for three on-duty personnel for 24-hours
- be within 250 feet of the Building 5016
- be located by public access point
- meet all regulations/AF Installation Force Protection Guide for access control point facilities
- have "Presidential" appearance
- provide a waiting room for ten guests
- provide a restroom for guests
- provide a secure guard area with dedicated restroom
- provide for package X-ray

Under the Proposed Action, the building would be torn down and replaced with a larger, more functional 1,600 square foot structure. While the current building has minimal accessories, the new facility would have more modern and comfortable accommodations. If costs allow, other amenities would include a canopy over the vehicle entrapment area, a dog kennel, an office for the Shift Supervisor, and a chemical/biological filtration station for the guard station (USACE 2003).

Other site requirements involve modifications and additions to base infrastructure and utilities. The new building would be built in the footprint of the old facility upon demolition,

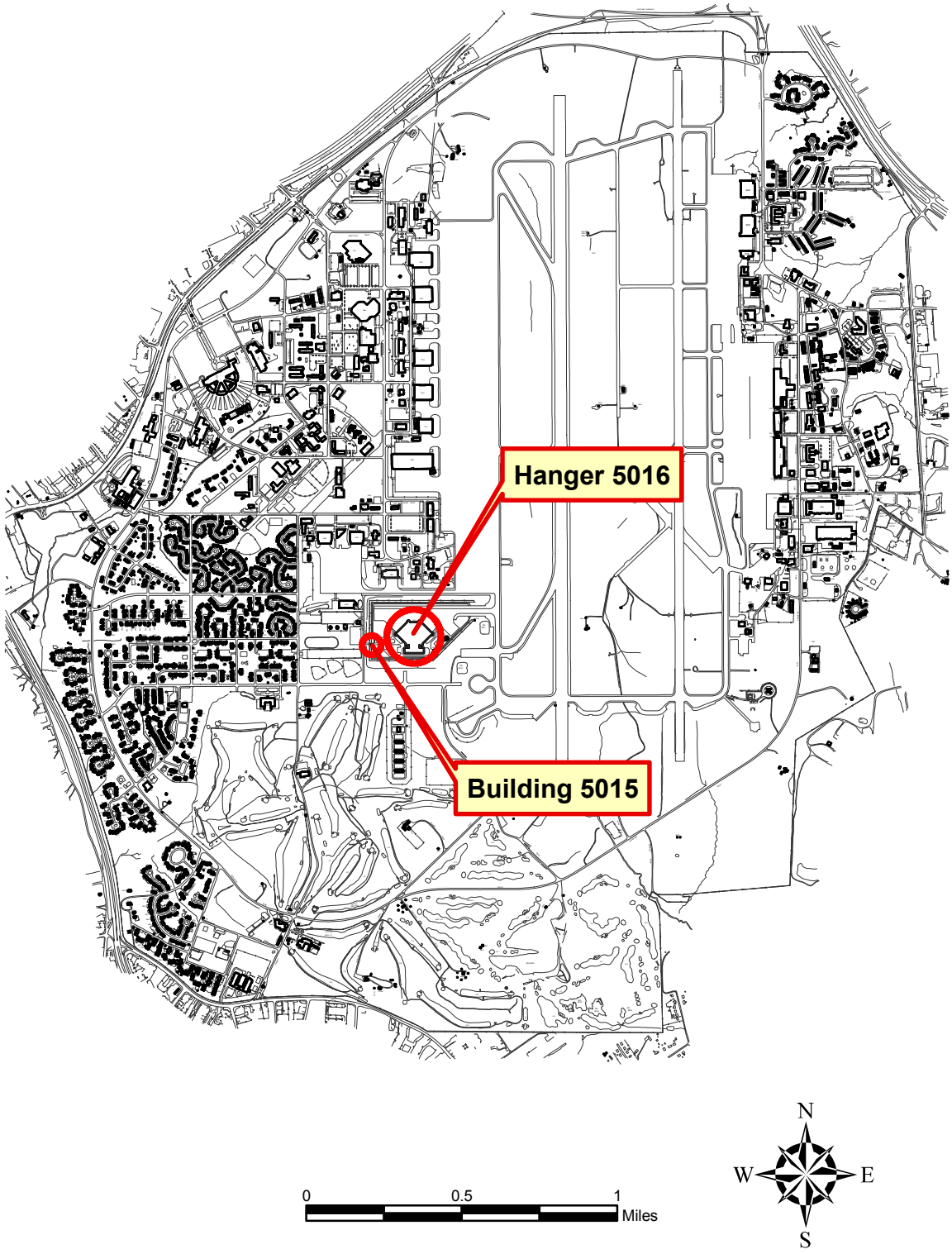

Figure 2-1. Location of Building 5015 and Hangar 5016 at Andrews AFB

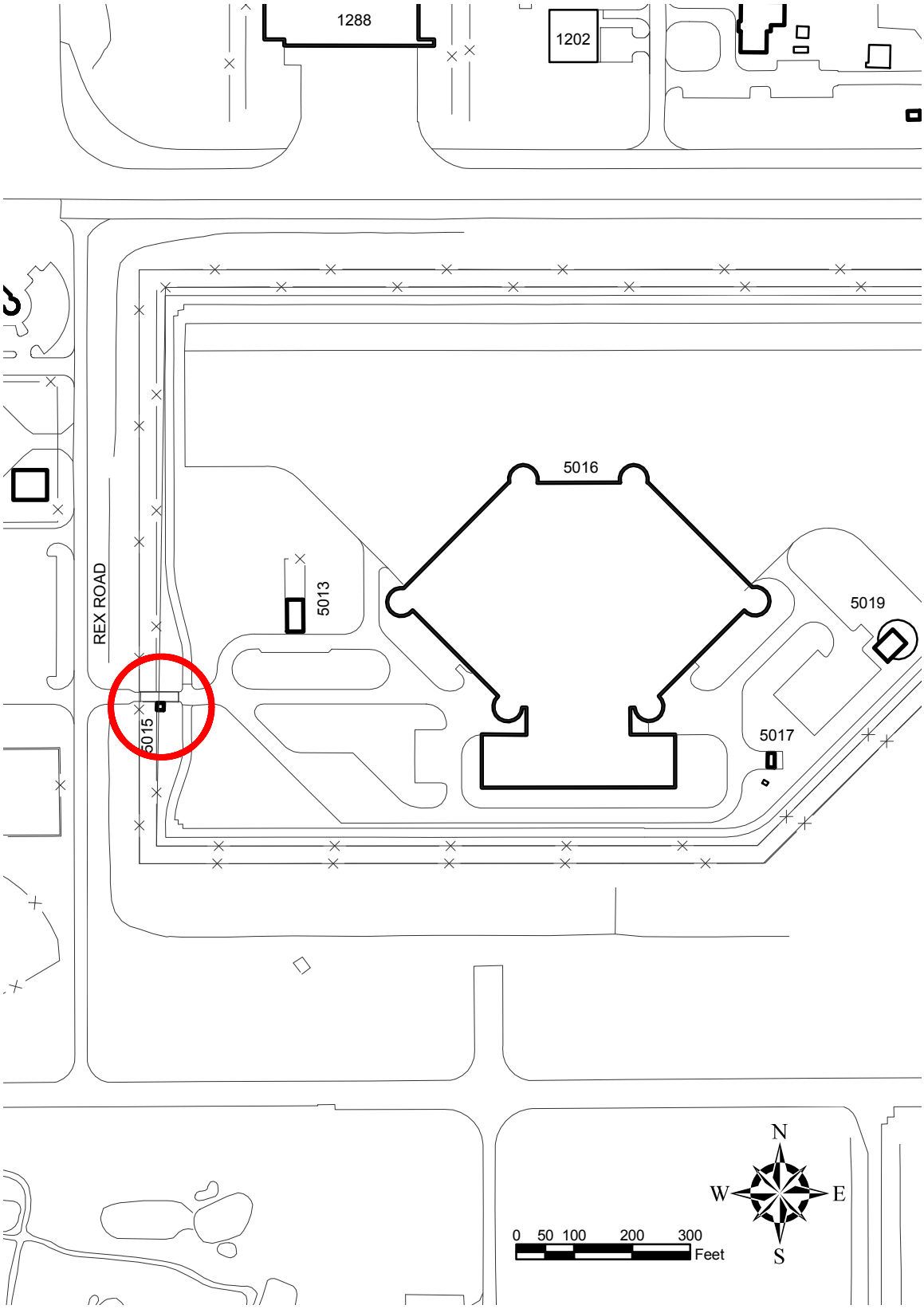

Figure 2-2. Building 5015 and Surrounding Buildings

approximately 15 to 17 feet from the existing fence line. New water and sewer lines would tie into existing lines, and include relocation of an eight-inch water line, new domestic and fire protection water lines, and new sewer lines. New power lines would be installed, running from the manhole near Building 5013. A new line would run from Building 5023 to 5014 with a new transformer for Building 5015. The lines from Building 5013 to 5014 would be abandoned. New telephone and local area network lines would also be installed for Building 5015. Additionally, three parking stalls would be built, and the patrol road would be relocated. The U.S. Army Corps of Engineers (Omaha) is still preparing an updated security plan, verifying the type of heating system that would be used, and determining the architectural theme for the proposed building (USACE 2003). The entire construction footprint would total approximately 30,000 square feet.

2.3 Alternatives Considered but Eliminated from Further Consideration

As part of the NEPA process, reasonable alternatives to the Proposed Action must be considered. Modifications to Building 5015 and other locations for Building 5015 were considered early in the conceptual phase of this project; however, such alternatives would not meet the criteria presented in Section 2.2. Therefore, other alternatives were initially considered, but were eliminated from further consideration because they were not found to be viable alternatives.

2.4 No Action Alternative

Under the No Action Alternative, Andrews AFB would continue to use Building 5015 in its current condition and configuration. There would be no change from the existing conditions at the installation. The current work environment of Building 5015 would continue to be suboptimal, force protection may be compromised, and future operations would suffer. Additionally, the image of 89 AW would suffer, as a result of neglecting their most important mission.

3. Affected Environment

Section 3.0 describes the environmental and socioeconomic resources and conditions most likely to be affected by the proposed construction project. This section provides information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential environmental and socioeconomic impacts of the Proposed Action and No Action Alternative on the baseline conditions are described in Section 4.0.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially subject to impacts. Some environmental resources and conditions that are often analyzed in an EA have been omitted from this analysis. The following details the basis for such exclusions:

- **Noise.** Implementation of the Proposed Action does not involve permanent alterations to aircraft inventories, operations, or missions. No new permanent ground-based heavy equipment operations are included in the Proposed Action. No activity included in the Proposed Action would result in a situation where residences would be impacted by an increase to present ambient noise levels. Furthermore, noise produced by construction and demolition activities associated with the Proposed Action would not significantly affect sensitive receptors. Accordingly, the USAF has omitted detailed examination of noise.
- **Land Use.** All activities associated with the Proposed Action would be consistent with present and foreseeable land use patterns at Andrews AFB. Implementation of the Proposed Action would not significantly alter the existing land use at any of the construction project locations. Accordingly, the USAF has omitted detailed examination of land use.
- **Water Resources.** No floodplains are near the proposed construction. A small stream and water impoundment are in the general vicinity of Building 5015, approximately 500 feet away. It is assumed that best management practices would be used during construction to minimize soil runoff. Therefore, the Proposed Action would have no effect on water resources. Accordingly, the USAF has omitted detailed examination of water resources.
- **Cultural Resources.** No cultural resources or artifacts have been identified in the area of the Proposed Action; therefore, there would be no impact to cultural resources at Andrews AFB. In case of an accidental archaeological discovery, Andrew AFB has a current *Integrated Cultural Resources Management Plan* to handle such discoveries in accordance with Federal and USAF regulations (AAFB 2002). Accordingly, the USAF has omitted detailed examination of cultural resources.

- **Biological Resources**. The Proposed Action would not affect biological resources at Andrews AFB. Proposed construction projects would occur on land that is not known to have any sensitive or threatened or endangered species. There are no wetlands near the proposed project location. Any noise effects resulting from construction would be minor and short-term, having a negligible effect, if any, on biological resources. Accordingly, the USAF has omitted detailed examination of biological resources.
- **Socioeconomics and Environmental Justice**. The Proposed Action does not involve any activities that would contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Andrews AFB; therefore, there would be no changes in area population or associated changes in demand for housing and services. Furthermore, all construction would occur within Andrews AFB boundaries, eliminating any disproportionate effects on minorities or low-income families under EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Accordingly, the USAF has omitted detailed examination of socioeconomics.

3.1 Air Quality

3.1.1 Definition of Resource

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by U.S. Environmental Protection Agency (USEPA) for "criteria pollutants," including ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2, or SO_x when referring to any sulfur oxide), particulate matter equal to or less than 10 microns in diameter (PM_{10}), particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). NAAQS represent maximum levels of background pollution in the ambient air that are considered safe, with an adequate margin of safety to protect public health and welfare (see Table 3-1).

The CAA places most of the responsibility to achieve compliance with the NAAQS on the individual states and/or local agencies that have been delegated as the CAA authority by USEPA. This is achieved through a State Implementation Plan (SIP), which is required under the CAA. The SIP is a compilation of goals, strategies, schedules, permitting programs, and enforcement actions that lead the state into compliance with all NAAQS. Any changes to the compliance schedule or plan must be incorporated into the SIP and approved by USEPA. Areas not in

Table 3-1. National Ambient Air Quality Standards

Pollutant	Standard Value		Standard Type
Carbon Monoxide (CO)			
8-hour Average	9 ppm[2]	(10 mg/m^3)[3,4]	Primary
1-hour Average	35 ppm	(40 mg/m^3)[3]	Primary
Nitrogen Dioxide (NO_2)			
Annual Arithmetic Mean	0.053 ppm	(100 $\mu g/m^3$)[3,5]	Primary & Secondary
Ozone (O_3)			
1-hour Average[1]	0.12 ppm	(235 $\mu g/m^3$)[3]	Primary & Secondary
8-hour Average	0.08 ppm	(157 $\mu g/m^3$)[3]	Primary & Secondary
Lead (Pb)			
Quarterly Average		1.5 $\mu g/m^3$	Primary & Secondary
Particulate ≤ 10 micrometers (PM_{10})			
Annual Arithmetic Mean		50 $\mu g/m^3$	Primary & Secondary
24-hour Average		150 $\mu g/m^3$	Primary & Secondary
Particulate ≤ 2.5 micrometers ($PM_{2.5}$)			
Annual Arithmetic Mean		15 $\mu g/m^3$	Primary & Secondary
24-hour Average		65 $\mu g/m^3$	Primary & Secondary
Sulfur Dioxide (SO_2)			
Annual Arithmetic Mean	0.03 ppm	(80 $\mu g/m^3$)[3]	Primary
24-hour Average	0.14 ppm	(365 $\mu g/m^3$)[3]	Primary
3-hour Average	0.50 ppm	(1300 $\mu g/m^3$)[3]	Secondary

Notes:

[1] The ozone 1-hour standard applies only to areas that were designated non-attainment when the ozone 8-hour standard was adopted in July 1997. The new 8-hour ozone standard is currently being contested in Federal court. No areas have been deemed non-attainment with the new 8-hour standard pending resolution of this case.

[2] ppm – parts per million

[3] Parenthetical value is an approximately equivalent concentration.

[4] mg/m3 – milligrams per cubic meter

[5] µg/m3 – micrograms per cubic meter

compliance with a standard can be declared "non-attainment areas" by USEPA or the appropriate state or local agency. Based on the severity of an area's non-attainment (i.e., number of times that ambient air quality exceeds the NAAQS), USEPA also categorizes non-attainment areas (e.g., marginal, serious, severe, extreme). Areas designated by USEPA as being in non-attainment for one or more of the seven NAAQS may petition USEPA for re-designation as a maintenance area if they are able to demonstrate they have met the national standard for the three years preceding the re-designation request. At the time the state petitions USEPA for re-designation, it must also submit a revision of its SIP to provide for the maintenance of the applicable NAAQS for at least 10 years after re-designation ("maintenance plan") pursuant to CAA §175(A).

Under the General Conformity Rule, the CAA prohibits Federal agencies from performing projects that do not conform to a USEPA-approved SIP. In 1993, USEPA developed final rules for how Federal agencies must determine air quality conformity prior to implementing a proposed Federal action. Under these rules, certain actions are exempted from conformity determinations, while others are assumed to be in conformity if total project emissions are below *de minimis* levels established under 40 CFR Part 93.153. Total project emissions include both direct and indirect emissions caused by the Federal action.

The CAA and the CAA Amendments of 1990 also require states to permit "major" stationary sources. A major stationary source is a facility (i.e., plant, base, or activity) that emits more than 100 tons annually of any one criteria air pollutant, 10 tons per year (tpy) of a single hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. There are 188 listed HAPs regulated under the CAA. The purpose of the permitting rule is to establish regulatory control over large facilities or processes that routinely emit significant amounts of pollutants activities and to assess and monitor their impact upon local and regional air quality.

3.1.2 Existing Conditions

Regional Climate. The climate at Andrews AFB is temperate and influenced by an easterly air flow that produces frequent successions of high and low pressure systems. Rainfall is generally distributed throughout the year, with summer being the wettest season. The average annual temperature at Andrews AFB is 56º Fahrenheit (ºF), the mean annual precipitation is 42.46 inches, the mean average snowfall is 21.5 inches, and the average wind speed is 6 knots (USAF 2001). Table 3-2 below presents a summary of the average monthly temperature and precipitation for the local area.

Regional Air Quality. USEPA classifies the air quality in an Air Quality Control Region (AQCR) or an air basin according to whether the concentration of criteria pollutants in ambient air exceeds the primary or secondary NAAQS. The State of Maryland is divided into six AQCRs; Andrews AFB is located in AQCR IV.

Areas within each AQCR are designated as "attainment," "non-attainment," or "unclassifiable" for each of the six criteria pollutants. Attainment means that the air quality within an air basin or AQCR is better than the NAAQS; non-attainment indicates that a specific air pollutant's concentration exceeds NAAQS; and an unclassifiable air quality designation by USEPA means

that there is not enough information to appropriately classify an air basin or AQCR, so the area is considered attainment.

Table 3-2. Local Climate Summary

Month	Average Temperature (°F)	Average Precipitation (Inches)
January	34.1	3.08
February	36.4	2.81
March	44.6	3.59
April	54.9	3.07
May	64.1	4.11
June	72.5	3.60
July	76.5	4.41
August	75.5	4.30
September	68.9	3.60
October	58.0	3.25
November	47.8	3.44
December	37.9	3.35

Source: USAF 2001

The General Conformity Rule requires that any Federal action conform to the requirements of a SIP or Federal Implementation Plan (FIP). More specifically, CAA Conformity is assured when a Federal action *does not do any one of the following*:

- Cause a new violation of a NAAQS
- Contribute to an increase in the frequency or severity of violations of NAAQS
- Delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS

The Conformity Rule applies only to actions in non-attainment or maintenance areas, and considers both direct and indirect emissions. However, since stationary sources are addressed by local or state New Source Review permitting requirements that ensure conformity with applicable CAA elements, this rule only addresses non-stationary/unpermitted emissions sources. Additionally, the rule applies only to Federal actions that are considered "regionally significant" or where the total emissions from the action meet or exceed the *de minimis* thresholds. An action is regionally significant when the total non-attainment pollutant emissions exceed 10 percent of

the non-attainment areas total emissions inventory for that non-attainment pollutant. If a Federal action meets the *de minimis* threshold requirements and is not considered regionally significant, then a full Conformity Determination is not required.

Andrews AFB. Andrews AFB is located in Prince George's County, Maryland within the boundaries of Maryland AQCR IV, which is regulated by the Maryland Department of Environment (MDE). This region consists of Washington, D.C.; Prince George's, Montgomery, Calvert, Charles, and Fredrick counties, Maryland; Stafford, Prince William, Loudoun, Arlington, and Fairfax counties, Virginia; and the cities of Falls Church and Alexandria in Virginia. Based on historical ambient air quality monitoring records, Maryland AQCR IV has been designated by the USEPA as a "severe" non-attainment area for ozone. The USEPA is also establishing dates by which Washington, D.C., the State of Maryland, and the Commonwealth of Virginia each must submit revisions to their SIPs to adopt severe area requirements. Maryland AQCR IV is in attainment for CO, PM_{10}, SO_x, NO_2, and Pb.

As required under MDE rules and regulations, each year Andrews AFB compiles and submits an inventory of regulated pollutant emissions from permitted stationary sources (AFIERA 2002a). This comprehensive inventory includes stationary/permitted equipment, as well as fugitive and area sources of regulated pollutants generated during the reporting period.

3.2 Geological Resources

3.2.1 Definition of Resource

Geological resources consist of the earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography, soils, geology, minerals, and, where applicable, paleontology.

Topography pertains to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soils properties must be examined for their compatibility with particular construction activities or types of land use.

Geology, the study of the earth's composition, provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition. Hydrogeology extends the study of the subsurface to water-bearing structures. Hydrogeological information helps in the assessment of groundwater quality and quantity and its movement.

3.2.2 Existing Conditions

Physiography and Topography. Andrews AFB is near the western edge of the middle Atlantic Coastal Plain physiographic province with the fall line between the Piedmont and Coastal Plain located approximately 12 miles west of the main base. The Blue Ridge Mountains are about 60 miles west of the main base and Chesapeake Bay is 25 miles east. The Coastal Plain province is primarily characterized by unconsolidated substrata. The vast majority of this area is level to gently sloping with local relief generally being less than 100 feet, except for moderately steep stream banks. Andrews AFB is located in a level plateau between the Anacostia River on the west and the Patuxent River on the east. Land surface elevations on Andrews AFB vary from approximately 215 feet above mean sea level (MSL) to about 281 feet above MSL (USAF 2001).

Natural Hazards. The mid-Atlantic and central Appalachian region, including Maryland, is characterized by a moderate amount of low-level earthquake activity, but their cause or causes are largely a matter of speculation. In Maryland, for example, there are numerous faults, but none are known or suspected to be active. Because of the relatively low seismic energy release, this region has received relatively little attention from earthquake seismologists (MGS 2003).

Soils. Two major soil associations are present in the Andrews AFB area, the Sassafras-Croom association and the Beltsville-Leonardtown-Chillum association (USAF 2001). The Sassafras-Croom association is found along major drainage ways to Tinker Creek and Piscataway Creek. It consists of gently sloping to steep, well-drained, dominantly gravelly soils with a compact subsoil or substratum. This association consists of 30 percent Sassafras soils, 25 percent Croom soils, and 45 percent minor soils.

The Beltsville-Leonardtown-Chillum association covers most of the north end of main base, extends through the central portion of main base to the southern boundary and along the eastern boundary of the base. These soils are predominately gently to moderately sloping, but may include areas that are nearly level to fairly steep. This association consists mainly of moderately

deep, well-drained soils with a compacted subsoil or substratum and is composed of about 45 percent Beltsville soils, 13 percent Leonardtown soils, and 42 percent Chillum and minor soils.

3.3 Hazardous Materials and Wastes

3.3.1 Definition of Resource

Hazardous material is defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act (TSCA), as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that may cause an increase in mortality, a serious irreversible illness, incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments (HSWA), as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that poses a substantial present or potential hazard to human health or the environment.

Evaluation of hazardous materials and wastes focuses on underground storage tanks and aboveground storage tanks and the storage, transport, and use of pesticides and herbicides, fuels, and petroleum, oil, and lubricants (POL). Evaluation may also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Special hazards are those substances that may pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Significant hazards associated with the Proposed Action are asbestos and lead-based paint. The presence of special hazards or controls over them may affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, Department of Defense (DOD) has dictated that all facilities develop and implement

Hazardous Material Emergency Planning and Response Plans or Spill Prevention, Control, and Countermeasure Plans. Also, DOD has developed the Environmental Restoration Program (ERP), intended to facilitate thorough investigation and cleanup of contaminated sites located on military installations. These plans and programs, in addition to established legislation (i.e., CERCLA and RCRA), effectively form the "safety net" intended to protect the ecosystems on which most living organisms depend.

AFPD 32-70, *Environmental Quality*, establishes the policy that USAF is committed to:

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations
- Planning its future activities to minimize environmental impacts
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust
- Eliminating pollution from its activities wherever possible

AFPD 32-70 and the AFI 32-7000 series incorporate the requirements of all Federal regulations, other AFIs and DOD Directives for the management of hazardous materials, hazardous wastes and special hazards.

3.3.2 Existing Conditions

Hazardous Materials. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials; and to those who manage, monitor, or track any of those activities. The 89 AW has established a hazardous materials pharmacy in accordance with AFI 32-7086 (AFIERA 2002b). The pharmacy ensures that only the smallest quantities of hazardous materials necessary to accomplish the mission are purchased and used.

Hazardous and toxic material procurements at Andrews AFB are approved and tracked by the Bioenvironmental Engineering Office located at Andrews AFB. The Environmental Management Flight office at Andrews AFB supports and monitors environmental permits, hazardous material and hazardous waste storage, spill prevention and response, and participation on the Base Environmental Protection Committee.

Hazardous Wastes. Hazardous wastes generated within the State of Maryland must be managed in accordance with USEPA, State of Maryland, and USAF regulatory requirements. The 89 AW maintains a *Hazardous Waste Management Plan* (AFIERA 2002b) as directed by AFI 32-7042, *Solid and Hazardous Waste Compliance*. This plan prescribes the roles and responsibilities of all members of Andrews AFB with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for solid waste and hazardous waste management.

Wastes generated at Andrews AFB include pesticides, herbicides, POL, deicing fluids, flammable solvents, contaminated fuels and lubricants, paint/coating, stripping chemicals, waste oils, waste paint-related materials, MSW, and other miscellaneous wastes. Management of hazardous waste is the responsibility of each waste-generating organization and environmental flight (89 CES/CEV). Andrews AFB has a USEPA permit for hazardous waste (AFIERA 2002b).

A USEPA identification number has been assigned to Andrews AFB for use in tracking hazardous waste once it leaves the base. It is the responsibility of hazardous waste generators to ensure that their hazardous waste is transferred daily to a designated 90-day hazardous waste site. Accumulation of hazardous waste at Andrews AFB includes three different periods of accumulations: initial accumulation points, interim accumulation (accumulation site) at the centralized accumulation site (90 day storage area), and extended storage at the treatment, storage, and disposal facility. There are a number of hazardous waste initial accumulation points authorized on Andrews AFB. Base Supply/Pharmacy has appointed a primary and alternate manager for each hazardous waste site on Andrews AFB. Hazard waste generators are required to maintain a listing of all the hazardous waste streams generated in their section, proper identification, handling, storage, and record keeping of hazardous waste.

Pollution Prevention. AFI 32-7080, *Pollution Prevention Program*, implements the regulatory mandates in the Emergency Planning and Community Right-to-Know Act, Pollution Prevention Act of 1990; EO 12856, *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements*; EO 12902, *Energy Efficiency and Water Conservation at Federal Facilities*; and EO 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*. In accordance with EO 13101, USAF preferentially chooses recycled-content products where possible. AFI 32-7080 prescribes the establishment of Pollution Prevention Management Plans. The 89 AW fulfills this requirement with the following plans:

- *Storm Water Pollution Prevention Plan* (89 AW 1998)
- *Hazardous Waste Management Plan Andrews AFB, MD* (AFIERA 2002b)
- *Pollution Prevention Management Plan* (AAFB 2003a)
- *Hazardous Material Emergency Planning and Response Plan Andrews Air Force Base, Maryland* (AAFB 1998)
- *Solid Waste Management Plan* (AAFB 2003b)

These plans ensure that Andrews AFB maintains a waste reduction program and meets the requirements of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program, and Federal, state, and local requirements for spill prevention control and countermeasures.

Asbestos. AFI 32-1052, *Facilities Asbestos Management,* provides the direction for asbestos management at USAF installations. This instruction incorporates by reference applicable requirements of 29 CFR 669 *et seq*., 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.3.80, Section 112 of the CAA, and other applicable AFIs and DOD Directives. AFI 32-1052 requires bases to develop an asbestos management plan for the purpose of maintaining a permanent record of the status and condition of asbestos containing materials (ACM) in installation facilities, as well as documenting asbestos management efforts. In addition, the instruction requires installations to develop an asbestos operating plan detailing how the installation accomplishes asbestos-related projects. Asbestos is regulated by the USEPA with the authority promulgated under the Occupational Safety and Health Act, 29 U.S.C. § 669, *et seq*. Section 112 of the CAA regulates emission of asbestos fibers to ambient air. The USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Asbestos at Andrews AFB is managed in accordance with the *Asbestos Management Program Plan* that was updated in 2002 (89 AW 2002). This plan specifies procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM abatement projects. Additionally, it is designed to protect personnel who live and work on Andrews AFB from exposure to airborne asbestos fibers as well as to ensure the installation remains in compliance with Federal, state, and local regulations pertaining to asbestos. Not all of the buildings on Andrews AFB have been surveyed to locate, identify, and evaluate any materials containing asbestos (89 AW 2002). Materials that may contain asbestos include pipe insulation and floor

tiles. Asbestos materials are removed on an as-needed basis to minimize health risks from release of asbestos fibers during normal activities, maintenance, renovation, or demolition.

Lead-Based Paint. The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), passed by Congress on October 28, 1992, regulates the use and disposal of lead-based paint (LBP) on Federal facilities. Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards.

USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by reference the requirements of 29 CFR 1910.120, 29 CFR 1926, 40 CFR 50.12, 40 CFR 240 through 280, the CAA, and other applicable Federal regulations. Additionally, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. LBP at Andrews AFB is managed in accordance with the *Lead-Based Paint Management Plan* that was updated in 2002 (USAF 2002). Not all of the buildings on Andrews AFB have been surveyed to locate, identify, and evaluate any materials containing LBP (USAF 2002).

Environmental Restoration Program. ERP, formerly known as the Installation Restoration Program, is a subcomponent of the Defense Environmental Restoration Program (DERP) that became law under the SARA. The ERP requires each DOD installation to identify, investigate, and cleanup hazardous waste disposal or release sites.

Andrews AFB began its ERP in 1985 with the investigation of possible locations of hazardous waste contamination (Amoako 2003). Andrews AFB was officially listed on the National Priorities List (NPL) by the USEPA in May 1999. The CERCLA sites are managed by the Andrews AFB's regulatory partnering group, which includes USEPA, MDE, and the Prince George's County Health Department. Petroleum sites exempted from regulation under CERCLA are delegated by USEPA to the MDE Waste Management Administration (Oil Control Program).

Andrews AFB manages 23 Sites and 10 Areas of Concern (AOC), which includes three remote sites located in Brandywine and Davidsonville, Maryland. Numerous cleanup actions have taken place at Andrews AFB, including the removal of hundreds of underground storage tanks (UST), installation of groundwater treatment systems at key locations, and removal of residual waste from areas to decrease the risk to human health and the environment.

Four of the 23 sites and ten AOC (ST-09, Abandoned USTs; SS-12, JP-4 Spill Site; SS-13, POL Storage Yard Spill; and ST-20, USTs) have been closed by MDE's Oil Control Program.

(Amoako 2003). All the contamination at the Andrews AFB ERP sites, with the exception of one (Landfill 5/LF-05), is contained within the base boundaries. A remedial investigation is currently ongoing to assess the off-base contamination, if any, resulting from past waste-disposal activities at LF-05. Andrews AFB is still evaluating the potential risks posed by the contamination at their other ERP sites and AOCs. However, from information gathered so far, no surrounding communities are affected.

3.4 Infrastructure and Utilities

3.4.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to economic growth of an area. The infrastructure information contained in this section was obtained from the *Andrews Air Force Base General Plan* (AAFB undated) and provides a brief overview of each infrastructure component and comments on its existing general condition. The infrastructure components to be discussed in this section include transportation systems, utilities (electrical power, natural gas, liquid fuel, and water supply), solid waste, and sanitary systems.

Solid waste management primarily deals with the availability of landfills to support a population's residential, commercial, and industrial needs. Alternative means of waste disposal may involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and limited to, disposal of construction and demolition debris. Recycling programs for various waste categories (e.g., glass, metals, and papers) reduce reliance of landfills for disposal.

3.4.2 Existing Conditions

Transportation Systems. Andrews AFB is located approximately five miles southeast of Washington, D.C. The base is situated at the confluence of major transportation arteries making it readily accessible to the Washington, D.C. Metropolitan Area, the State of Maryland, and Commonwealth of Virginia.

The off-base transportation system consists of regional access to the base via Interstate 495, to the north. The base is bounded by Allentown Road (State Route [SR]-337) on the west and north, Branch Avenue (SR-5) on the west, Marlboro Pike and Pennsylvania Avenue (SR-4) on the northeast, Dower House Road on the east, and Old Alexandria Ferry Road on the south. Suitland Road provides direct access to the Main Gate at Andrews AFB. Other Andrews AFB gates are West Gate, North Gate, Virginia Avenue Gate, Maryland Gate, and Pearl Harbor Gate, none of which are currently used. The transportation network on-base is delineated according to the road classifications outlined in AFI 32-7062, *Air Force Comprehensive Planning*. This AFI classifies the road network into three groups: arterial, collector, and local.

A network of major and minor collector roads provide vehicular circulation on the base. These collectors are fed by local residential and limited-access streets. The major collectors on-base are Perimeter Road, Patrick Avenue, Arnold Drive, Virginia Avenue, and Menoher Drive. Minor collectors on-base are Pennsylvania Avenue/Fetchet Avenue, Brookley Avenue, Alabama Avenue/D Street, Arkansas Road/Arkansas Avenue, San Antonio Boulevard, Tuskeegee Drive, and Atlanta Avenue.

Electrical Power. The Potomac Electric Power Company (PEPCO) provides Andrews AFB with electrical power. The base receives power delivered through three high voltage primary feeders via overhead lines and a 69 kilovolt main substation. The primary electrical distribution system on base is via 13.2 kilovolt transmission lines. Power metering in the main substation belongs to PEPCO and all other electrical equipment in the main substation and throughout the base is government owned and maintained.

Natural Gas. Washington Gas Light Company provides Andrews housing units with natural gas. There are two separate 100-pounds per square inch gauge steam distribution systems serving the rest of the base. Each of these distribution systems is served by a central heating plant. Both systems consist of direct-buried piping; however, the western system is selectively being replaced with shallow-trench mains. All boilers in these two central heating plants have recently been converted to natural gas.

Liquid Fuel. Piney Point Industries provides liquid fuel distribution to Andrews AFB via an 8-in inch pipeline. This line enters the base and connects to three storage tanks owned by Piney Point Industries before finally connecting to USAF-owned POL systems. Andrews AFB utilizes JP-8, diesel, compressed natural gas, and motor gas (mogas) fuels.

Wastewater and Storm Water Systems. No wastewater treatment plant (WWTP) is located on Andrews AFB. However, there are 128 lift stations located throughout the base. Domestic and industrial wastewater from the main base is piped to the WWTP managed by the Washington Suburban Sanitary Commission (WSSC). Wastewater is monitored at two sites on Andrews AFB: one located on the east side of the base and one on the west side of the base.

Both the Brandywine and Davidsonville Transmitter Sites have biological WWTPs regulated under NPDES permits. The Davidsonville WWTP is currently not functional and collected wastes are trucked to Andrews AFB and treated at the WSSC WWTP. A plan is currently being developed to connect the Brandywine and Davidsonville WWTPs to the WSSC WWTP.

There are five small ponds and one larger surface water impoundment on Andrews AFB. Storm water passes through oil/water separators in the industrial areas and through swales and ditches in other areas. Primarily, underground concrete pipes convey storm water runoff. Two major storm drain outfalls discharge eventually into Henson Creek, Meeting House, and the Payne Branch to the west; Henson and Cabin Creeks and the Charles Branch to the east; and Piscataway Creek to the southeast. Ultimately, the discharges flow to the Patuxent and Potomac Rivers (USAF 2001).

Water Supply. The WSSC provides water supply to Andrews AFB via a 14-inch service connection.

Solid Waste. Municipal solid waste (MSW) at Andrews AFB is managed in accordance with the guidelines specified in AFI 32-7042, *Solid and Hazardous Waste Compliance*. This AFI incorporates by reference the requirements of Subtitle D, 40 CFR Parts 240 through 244, 257, and 258, and other applicable Federal regulations, AFIs, and DOD Directives. In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program that incorporates the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; record-keeping and reporting; and pollution prevention.

The Environment Article Annotated Code of Maryland and Title 26 of the Code of Maryland Regulations are the primary statue and regulations relating to environmental protection and regulation in the State of Maryland. These laws and regulations contain requirements for landfills, asbestos, medical waste, tire recycling, industrial waste disposal, and wood waste, newsprint, plastic container labeling, telephone directory recycling, yard waste banned from disposal facilities, battery collection and battery recycling. The annual reporting of quantities of solid waste disposed in the state, and the jurisdictions where it originated is also governed by

these laws. In addition, solid waste exported from the state for disposal is addressed within these laws and regulations.

A contractor handles the collection, transportation, and removal of non-hazardous MSW from Andrews AFB. Waste is collected in dumpsters located throughout the base and then removed. Currently, there are no operating landfills at Andrews AFB.

Subtitle 21-126 of the Prince George's County Code and Section 9-210(b) (2) and (3) of the Environment Article regulate the disposal of materials in a rubblefill. A rubblefill is a landfill in which construction or building demolition rubble is placed in a controlled manner. Rubble is a type of solid waste and includes land clearing debris, demolition debris and construction debris. In Prince George's County, there is currently one operating rubblefill, the Ritchie-Marlboro facility (PGC 2002). The Ritchie-Marlboro Road Rubblefill has an approved State permit (1999-WRF-0126, issued October 25, 1999, expiring October 24, 2004) and County license (RF-001-86) and is currently in operation. Recently, an additional 30 acres were purchased at the site. However, this additional land is not approved for use as part of the existing rubblefill operation. The projected capacity based on projected demands is an additional 20 years.

Non-hazardous MSW from Andrews AFB is primarily transported to the Brown Station Road Sanitary Landfill, located in Prince George’s County approximately two miles northwest of the Town of Upper Marlboro. The Brown Station Road Sanitary Landfill is managed by Prince George’s County.

In Fiscal Year (FY) 2002, Andrews AFB disposed 1,177 tons of non-hazardous MSW and 17.5 tons of construction and demolition (C&D) waste (AAFB 2003b). C&D wastes on Andrews AFB have been hard to quantify since historical records have not been kept and not all contractors report their C&D waste streams to Environmental Flight (89 CES/CEV). Andrews AFB is currently trying to correct this problem to obtain a more accurate estimate of the C&D waste stream (AAFB 2003b). C&D waste generated from specific construction, renovation, and maintenance projects on Andrews AFB, most of which are performed by off-base contractors, is the responsibility of the contractor. All non-recyclable C&D waste is collected in C&D dumpsters and stored on the project site until it is taken away by the contractor to an approved C&D landfill. C&D waste contaminated with hazardous waste, asbestos, LBP, or other undesirable components are managed in accordance with AFI 32-7042.

Sanitary Systems. Sanitary wastes generated at Andrews AFB are treated off-base at WWTPs owned and operated by the WSSC. Two separate wastewater collection systems serve the base. Currently, wastewater flows from the base are combined with wastewater from the surrounding off-base commercial area.

3.5 Safety

3.5.1 Definition of Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses (1) workers' health and safety during demolition and construction activities and facilities construction, and (2) public safety during demolition and construction activities and during subsequent operations of those facilities.

Construction work site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and USAF regulations designed to comply with standards issued by the Occupational Safety and Health Administration and USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors.

Other safety issues typically associated with and specific to military flying units and their airfields include the potential for mid-air aircraft mishaps, aircraft collisions with objects on the ground, weather-related accidents, and bird-aircraft collisions. However, since the Proposed Action does not involve additions to or changes in any of the aircraft operations at Andrews AFB, information relating to the safety of aircraft is not presented in this EA.

3.5.2 Existing Conditions

All contractors performing construction activities at Andrews AFB are responsible for following ground safety regulations and worker compensation programs and are required to conduct construction activities in a manner that does not pose any risk to its workers or base personnel. An industrial hygiene program addresses exposure to hazardous materials, use of personal protective equipment, and availability of Material Safety Data Sheets. Industrial hygiene is the

responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operations; to monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous material), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; to recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

4. Environmental Consequences

This section of the EA assesses potential environmental consequences associated with the Proposed Action. Potential impacts are addressed in the context of the scope of the Proposed Action, including the additional amenities, as described in Section 2.0 and in consideration of the potentially affected environment as characterized in Section 3.0.

4.1 Air Quality

4.1.1 Evaluation Criteria

The potential impacts to local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS attainment areas would be considered significant if the net increases in pollutant emissions from the Federal action resulted in one of the following scenarios:

- Caused or contributed to a violation of any national or state ambient air quality standard
- Exposed sensitive receptors to substantially increased pollutant concentrations
- Represented an increase of ten percent or more emissions inventory in the affected AQCR

Impacts to air quality in NAAQS non-attainment areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

- Caused or contributed to a violation of any national or state ambient air quality standard
- Increased the frequency or severity of a violation of any ambient air quality standard
- Exceeded any significance criteria established in a SIP
- Delayed the attainment of any standard or other milestone contained in the SIP

With respect to the General Conformity Rule, impacts to air quality would be considered significant if the proposed Federal action resulted in an increase of a non-attainment or maintenance area's emission inventory by ten percent or more for one or more non-attainment pollutants. The project could also be significant if such emissions exceed *de minimis* threshold

levels established in 40 CFR 93.153(b) for individual non-attainment pollutants or for pollutants for which the area has been designated as a non-attainment or maintenance area. In such cases, a more detailed conformity determination is required.

The *de minimis* threshold emission rates were established by the USEPA in the General Conformity Rule in order to focus analysis requirements on Federal actions with the potential to have significant air quality impacts. Table 4-1 presents these thresholds by regulated pollutant. These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA's New Source Review (NSR) Program (CAA Title I). As shown in Table 4-1, *de minimis* thresholds vary depending upon the severity of the non-attainment area designation by USEPA.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions to be significant if: 1) a proposed major stationary source is within 10 kilometers of any Class I area; and 2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of 1 $\mu g/m^3$ or more of any regulated pollutant in the Class I area (40 CFR 52.21(b)(23)(iii)). PSD regulations also define ambient air increments—limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's designation as Class I, II, or III (40 CFR 52.21(c)).

Local and regional pollutant impacts resulting from direct and indirect emissions from stationary emission sources under the Proposed Action are addressed through Federal and state permitting program requirements under the NSR and PSD regulations (40 CFR Parts 51 and 52 and MDE regulations). As noted previously, Andrews AFB has appropriate permits in place and has met all applicable permitting requirements and conditions for specific stationary devices.

Table 4-1. General Conformity Rule *de minimis* Emission Thresholds

Pollutant	Status	Non-Attainment Classification	*de minimis* Threshold (tons/yr)
Ozone (measured as – "precursors": Nitrogen Oxides (NO_x) or Volatile Organic Compounds (VOCs))	Non-attainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO_x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO_x)
		Outside ozone transport region	100
Carbon Monoxide (CO)	Non-attainment/ Maintenance	All	100
Particulate Matter <10 microns (PM_{10})	Non-attainment	Serious	70
	Maintenance	Moderate	100
		Not Applicable	100
Sulfur Dioxide (SO_2)	Non-attainment/ maintenance	Not Applicable	100
Nitrogen Dioxide (NO_2)	Non-attainment/ maintenance	Not Applicable	100

Source: 40 CFR 93.153(b)

4.1.2 Environmental Consequences

Andrews AFB is in AQCR IV, which is in severe ozone non-attainment. AQCR IV is in attainment with all other criteria pollutants.

No long-term effects on air quality would be expected as a result of the Proposed Action. Regulated pollutant emissions from the Proposed Action would not contribute to or affect local or regional attainment status with NAAQS. The Proposed Action would generate air pollutant emissions as a result of grading, filling, compacting, and paving operations, but there emissions would be temporary and would not be expected to generate any off-site impacts.

The Proposed Action would not cause or contribute to a violation of any ambient air quality standard. Construction activities would generate total suspended particulate (TSP) and PM_{10} emissions as fugitive dust from ground disturbing activities (e.g., grading, demolition, soil piles, unpaved roads, etc.) and combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day-to-day

depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity.

Construction activities would result in emissions of criteria pollutants as combustion products from construction equipment as well as evaporative emissions from architectural coatings and asphalt paving operations and would be of a temporary nature.

During construction, emissions from the Proposed Action would produce slightly elevated short-term PM_{10} ambient air concentrations. However, the effects would be temporary and would fall off rapidly with distance from the proposed construction site.

Use of Building 5015 may lead to minor, long-term increases of air pollutant emissions. The proposed building would have more sophisticated utilities such as heating/cooling systems. However, normal operation of the new facility would have no effect on air quality at Andrews AFB.

4.2 Geological Resources

4.2.1 Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Analysis of potential impacts on geological resources typically includes the following steps:

- Identification and description of resources that could potentially be affected
- Examination of a proposed action and the potential effects this action may have on the resource
- Assessment of the significance of potential impacts
- Provision of mitigation measures in the event that potentially significant impacts are identified

4.2.2 Environmental Consequences

Under the Proposed Action, construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Fugitive dust from construction activities would be minimized by watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. Standard erosion control means (e.g., silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce potential impacts related to these characteristics. Therefore, impacts to soils at the base would not be significant.

The Proposed Action would not cause or create significant changes to the topography of Andrews AFB or the surrounding area. Therefore, no significant impacts to regional or local topography or physiographic features would result from implementation of the Proposed Action.

4.3 Hazardous Material and Waste

4.3.1 Evaluation Criteria

Numerous local, state, and Federal laws regulate the storage, handling, disposal, and transportation of hazardous material and waste. The primary purpose of these laws is to protect public health and the environment. Potential impacts associated with hazardous material and waste would be significant if the storage, use, transportation, or disposal of these substances were to substantially increase the risk to human health or exposure to the environment.

4.3.2 Environmental Consequences

Hazardous Materials. Construction activities associated with the Proposed Action would require the use of certain hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. It is anticipated that the quantity of products containing hazardous materials used during construction would be minimal, and they would be used only for a short time. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations; this includes contractors submitting a list of hazardous materials to the Contracting Officer prior to the start of a project.

Hazardous Waste. It is anticipated that the quantity of hazardous wastes generated from proposed construction activities would be negligible. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations.

Construction of the proposed facility would not impact the Andrew AFB hazardous waste management program.

Asbestos and Lead-based Paint. Any ACM or LBP encountered during demolition of Building 5015 would be handled in accordance with established USAF policy and Andrew AFB's *Asbestos Management Program Plan* (89 AW 2002), *Final Lead-Based Paint Management Plan* (USAF 2002), *Hazardous Material Emergency Planning and Response Plan* (AAFB 1998), and *Hazardous Waste Management Program Plan* (AFIERA 2002b). USAF regulations prohibit the use of ACM and LBP for new construction. Specifications for the construction of the new Building 5015 would be in accordance with USAF policies and regulations.

Pollution Prevention. It is anticipated that the Proposed Action would not impact the pollution prevention program at Andrews AFB. Quantities of hazardous material and chemical purchases, off-base transport of hazardous waste, disposal of MSW, and energy consumption would remain unchanged under with implementation of the Proposed Action. The Pollution Prevention Program at Andrews AFB would accommodate the Proposed Action.

Environmental Restoration Program. The location of the Proposed Action is near AOC-26, an old fuel hydrant system that may have leaked petroleum into soils and groundwater. The site is being investigated further, but it is unlikely that AOC-26 would have any effect on the proposed construction because the separating distance is about 600 feet.

4.4 Infrastructure and Utilities

4.4.1 Evaluation Criteria

Impacts to infrastructure are evaluated on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, wastewater systems, and transportation patterns and circulation. Impacts may arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads, or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to base activities.

4.4.2 Environmental Consequences

Transportation Systems. There would be a temporary increase in the utilization of the installation's roadways as a result of construction traffic. Construction equipment would be driven to the project location and would likely be kept on-site during the duration of the project.

Following completion of construction, there would be no changes to transportation. Therefore, no adverse impacts to transportation systems would result from the Proposed Action.

Electrical Power. The Proposed Action would result in increased electrical power usage and a new power line. However, the electrical energy required for the new facility would be nominal in comparison to the total amount of energy required for the entire installation. Therefore, no adverse impacts to electrical power would result from the Proposed Action.

Natural Gas. Natural gas may be required in the new facility. As such, the Proposed Action would result in a net increase in natural gas usage. However, the natural gas required for the new facility would be nominal in comparison to the total amount of energy required for the entire installation.

Liquid Fuels. The Proposed Action would not result in the a net change in liquid fuel usage. Therefore, no adverse impacts to liquid fuel systems would result from the Proposed Action.

Water Supply. The Proposed Action would result in a net increase in water usage. While the current Building 5015 does not have running water, the proposed Building 5015 would have two new bathrooms. However, the increase in water usage is negligible when compared to total base usage. Therefore, only minor adverse impacts to water supply systems would result from the Proposed Action.

Solid Waste. In considering the basis for evaluating the significance of impacts on solid waste, several items were considered. These items include evaluating the degree to which the proposed construction projects could affect the existing solid waste management program and capacity of the area landfill.

Solid waste generated from the proposed construction activities would consist of small amoubts of building materials such as solid pieces of concrete, metals (conduit, piping, and wiring), and lumber. The Ritchie-Marlboro Rubblefill has the capacity to handle the additional C&D solid waste stream from the Proposed Action (PGC 2003). Therefore, implementation of the Proposed Action at Andrews AFB would not impact the solid waste management program at Andrews AFB or the capacity of the Ritchie-Marlboro Rubblefill.

Sanitary Systems. The Proposed Action would result in a net increase in sanitary system usage. However, the proposed Building 5015 would be very small and not generate a large increase in

sanitary system usage when compared to total base usage. Therefore, no adverse impacts to sanitary systems would result from the Proposed Action.

4.5 Safety

4.5.1 Evaluation Criteria

If implementation of the Proposed Action were to substantially increase risks associated with the safety of personnel, contractors, or the local community at Andrews AFB, or substantially hinder the ability to respond to an emergency, it would represent a significant impact. Furthermore, if implementation of the Proposed Action would result in incompatible land use with regard to safety criteria (e.g., height restrictions), impacts to safety would be significant.

4.5.2 Environmental Consequences

Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at Andrews AFB during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not pose a safety risk to base personnel or activities at the base. The proposed construction would enable the 89 AW to meet future mission objectives at the base and conduct or meet mission requirements in a safe and more secure environment.

The Proposed Action would provide a positive long-term impact to the base.

4.6 No Action Alternative

Under the No Action Alternative, conditions would remain as they are at present. Building 5015 would remain in its current form. While temporary construction-associated negative effects would not occur, long-term negative consequences would occur from implementation of the No Action Alternative. Workers would continue in a work environment that is less than satisfactory. Future operations at Building 5015 would not be possible given the limited space and amenities of its current condition. Added security benefits to the 89 AW's most important mission would also not be realized.

5. Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Recently, an EA involving the beddown of eight KC-135 Stratotankers and associated construction was completed for the Air Force Reserve Command at Andrews AFB. The project is located in the northern portion of Andrews AFB. Another EA is currently underway at Andrews AFB regarding the three other construction projects. These projects involve the Force Protection Building (Building 3015), a CEV addition (Building 3465), and an unused waste incinerator (Building 3306). The Building 1535 construction is located near the main gate on the western side of base. The other two are located on the eastern side of base approximately a half-mile apart. Future military construction involving smaller projects is also being planned at Andrews AFB. No significant impacts are anticipated from the Proposed Action in conjunction with these three projects.

5.1 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Geological Resources. Under the Proposed Action, construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Standard erosion control means would also reduce potential impacts related to these characteristics. Although unavoidable, the effect on soils at Andrews AFB base is not considered significant.

Hazardous Materials and Waste. The generation of hazardous materials and wastes are unavoidable conditions associated with the Proposed Action. However, the potential for these unavoidable situations would not significantly increase over baseline conditions and, therefore, are not considered significant.

Energy. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action or No Action Alternative.

5.2 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Polices, and Controls

Impacts to the ground surface as a result of the Proposed Action would occur entirely within the boundaries of Andrews AFB. Construction activities Building 5015 would not result in any significant or incompatible land use changes on or off base. The proposed projects have been sited according to existing land use zones. Consequently, construction activities would not be in conflict with base land use policies or objectives. The Proposed Action would not conflict with any applicable off-base land use ordinances or designated clear zones.

5.3 Relationship Between Short-term Use and Long-term Productivity

Short-term uses of the biophysical components of man's environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than five years. Long-term uses of man's environment include those impacts occurring over a period of more than five years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

The Proposed Action would not result in an intensification of land use at Andrews AFB. Development of the Proposed Action or No Action Alternative would not represent a significant loss of open space. Long-term productivity of this site would be increased by the development of the Proposed Action.

5.4 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Material Resources. Material resources utilized for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used for the operation of private and government-owned vehicles. Natural gas and electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Habitat. The Proposed Action would not result in the loss of vegetation or wildlife habitat on proposed construction sites. Proposed construction is occurring on already developed land that is restricted for other uses for security reasons. Furthermore, the Proposed Action would not remove open space or undeveloped land currently functioning as biological habitat.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities, and is considered beneficial.

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